

**What is claimed is:**

- 1 1. A system adapted to analyze a semiconductor die, the system comprising:  
2 a light source;  
3 a semiconductor analysis arrangement adapted to hold a semiconductor die and  
4 to use light from the light source to perturb the die for analyzing the die; and  
5 a fiber optic cable coupled between the light source and the analysis  
6 arrangement and adapted to direct light from the light source to the die in the analysis  
7 arrangement.
- 1 2. The system of claim 1, further comprising a light direction arrangement adapted  
2 to direct light from the fiber optic cable to a selected portion of the die.
- 1 3. The system of claim 1, wherein the light source includes a laser source.
- 1 4. The system of claim 1, wherein the semiconductor analysis arrangement  
2 includes a test chamber having a fixture adapted to hold the semiconductor die.
- 1 5. The system of claim 4, wherein the analysis arrangement is adapted to evacuate  
2 the test chamber.
- 1 6. The system of claim 5, wherein the light source is located outside of the test  
2 chamber, and wherein the fiber optic cable extends from the light source and into the  
3 test chamber.

1 7. The system of claim 1, further comprising a controller adapted to control the  
2 semiconductor analysis arrangement.

1 8. The system of claim 7, wherein the controller includes a computer.

1 9. The system of claim 1, wherein the fiber optic cable includes a primary fiber  
2 optic waveguide surrounded by a protective fiber optic waveguide.

1 10. The system of claim 1, wherein the fiber optic cable extends into the analysis  
2 arrangement and is adapted to direct light to a semiconductor die held in the analysis  
3 arrangement.

1 11. The system of claim 1, wherein the analysis arrangement includes a detection  
2 arrangement adapted to detect a response from the die to the light.

1 12. The system of claim 11, wherein the detection arrangement is adapted to detect a  
2 failure condition of the die.

1 13. The system of claim 1, further comprising at least one perturbation device in  
2 addition to the light source, the perturbation device adapted to perturb the die.

1 14. A system adapted to analyze a semiconductor die, the system comprising:

2 means for generating light;  
3 means for holding a semiconductor die and using the generated light to perturb  
4 the die for analyzing the die; and  
5 a fiber optic cable coupled between the means for generating light and the  
6 means for holding a semiconductor die and adapted to direct light from the means for  
7 generating light to the means for holding a semiconductor die.

1 15. A method for analyzing a semiconductor die, the method comprising:  
2 generating light;  
3 directing the generated light to a die analysis arrangement via a fiber optic cable;  
4 and  
5 holding a semiconductor die and using the generated light to perturb the die for  
6 analyzing the die.

1 16. The method of claim 15, wherein generating light includes generating laser  
2 light.

1 17. The method of claim 15, wherein using the generated light for analyzing the die  
2 includes directing the generated light to a selected portion of the die and stimulating the  
3 selected portion, further comprising detecting a response from the die to the stimulation  
4 and using the response to detect a characteristic of the die.

1 18. The method of claim 17, wherein using the response to detect a characteristic of  
2 the die includes detecting a cause of a failure of the die.

1 19. The method of claim 15, further comprising placing the die in a vacuum  
2 chamber and drawing a vacuum on the chamber, wherein holding the die includes  
3 holding the die in the chamber, wherein generating light includes generating light  
4 outside of the vacuum chamber and wherein directing the generated light to a die  
5 analysis arrangement via a fiber optic cable includes directing the generated light via a  
6 fiber optic cable extending into the vacuum chamber.